

C1
~~[a matrix] matrices formed [of said material of] in said substrate, said [matrix] matrices comprising [a first] at least two porous [region] regions, each of said at least two porous regions extending [a distance] at least partially across said substrate; and at least one detector fabricated on said substrate and associated with at least two porous regions.~~

C2
3. (Twice amended) The sample separation apparatus of claim 1, wherein each of said [first] at least two porous regions [region] comprises a capillary column.

C3
4. (Thrice amended) The sample separation apparatus of claim 1, wherein each of said [first] at least two porous regions [region] linearly traverses said substrate.

C3
5. (Thrice amended) The sample separation apparatus of claim 1, wherein one of said at least two [comprising a second] porous [region extending a distance] regions extends only partially across said substrate.

C4
6. (Twice amended) The sample separation apparatus of claim 5, wherein one of said [second] at least two porous regions [region] comprises a control column.

C4
7. (Twice amended) The sample separation apparatus of claim 1, further comprising a reaction region immediately situated along a length of and contiguous with at least one of said [first] at least two porous regions [region].

C5
9. (Twice amended) The sample separation apparatus of claim 7, wherein said reaction region is situated at a predetermined distance from an end of said [first] at least one porous region.

C5
10. (Twice amended) The sample separation apparatus of claim 5, further comprising [a first] reaction regions [region] situated immediately along [a length] lengths of each of said at

C5
least two [first] porous regions [region and a second reaction region situated immediately along a length of said second porous region].

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11. (Twice amended) The sample separation apparatus of claim 10, wherein a distance between [said] a first of said reaction [region] regions and an end of [said] a first of said at least two porous regions [region] is substantially the same as a distance between [said] a second of said reaction regions [region] and an end of [said] a second of said at least two porous regions [region].

C6
13. (Amended) The sample separation apparatus of claim [12] 1, wherein said at least one detector comprises a thermal detector.

C6
14. (Amended) The sample separation apparatus of claim [12] 1, wherein said at least one detector comprises a field effect transistor.

C7
15. (Amended) The sample separation apparatus of claim [12] 1, wherein said at least one detector comprises a voltage application component and a current detection component.

C7
18. (Twice amended) The sample separation apparatus of claim 1, further comprising a migration facilitator in communication with at least one of said at least two [first] porous regions [region].

C7
19. (Twice amended) The sample separation apparatus of claim 18, wherein said migration facilitator comprises a pump in communication with a first end of said at least one [first] porous region.

C8
21. (Twice amended) The sample separation apparatus of claim 18, wherein said migration facilitator comprises a vacuum source operatively in communication with a second end of said at least one [first] porous region.

C8
22. (Twice amended) The sample separation apparatus of claim 18, wherein said migration facilitator comprises a first electrode adjacent [a] said first end of said at least one [first] porous region and a second electrode adjacent a second end of said at least one [first] porous region.

C9
25. (Amended) The sample separation apparatus of claim 1, further comprising a stationary phase disposed in at least one of said [matrix] matrices.

C10
29. (Twice amended) The sample separation apparatus of claim 1, further comprising a sealing element situated over at least a portion of at least one of said at least two [first] porous regions [region].

C11
30. (Thrice amended) A separation apparatus, comprising:
a substrate[of a material];
at least [one] two capillary columns [column] formed in said substrate, each of said at least two capillary columns [of said material and] comprising a [first] porous matrix; and
a detector fabricated on said substrate and situated adjacent at least one of said at least two capillary columns [column].

C12
32. (Amended) The separation apparatus of claim 30, wherein each said [first] porous matrix comprises porous silicon.

C12
33. (Amended) The separation apparatus of claim 30, wherein at least one said [first] porous matrix comprises hemispherical grain silicon.

C12
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34. (Amended) The separation apparatus of claim 30, further comprising a solid phase disposed on said [first] porous matrix of at least one of said at least two capillary columns.

C13

39. (Twice amended) The separation apparatus of claim 30, [including] further comprising a pump in communication with at least one of said at least [one] two capillary columns [column].

C

40. (Twice amended) The separation apparatus of claim 30, further comprising a valve in communication with an end of at least one of said at least [one] two capillary columns [column].

C

41. (Twice amended) The separation apparatus of claim 30, including a vacuum source in communication with at least one of said at least [one] two capillary columns [column].

C14

42. (Twice amended) The separation apparatus of claim 30, including a first electrode in communication with a first end of a [said] first capillary column of said at least two capillary columns and a second electrode in communication with a second end of said first capillary column.

C14

46. (Twice amended) The separation apparatus of claim [45] 30, wherein said at least [one] two capillary columns [column and said at least another capillary column each] have substantially equal lengths.

C15

48. (Amended) The separation apparatus of claim [47] 30, wherein said [first] porous matrices [matrix and said second porous matrix] each comprise substantially equal surface areas.

C15

49. (Amended) The separation apparatus of claim 48, wherein said at least [one] two capillary columns [column and said at least another capillary column] each comprise substantially equal volumes.

C16
50. (Twice amended) The separation apparatus of claim 30, further comprising a sealing element situated over at least a portion of at least one of said at least [one] two capillary columns [column].

C17
51. (Thrice amended) A miniature chromatograph, comprising:
a substrate[of a material];
[a]porous matrices [matrix] formed in said substrate [of said material] and comprising at least [one] two capillary [column] columns, said porous [matrix] matrices each comprising a plurality of pores.

C18
52. (Twice amended) The miniature chromatograph of claim 51, further comprising at least one detector situated adjacent at least one of said at least [one] two capillary [column] columns.

C19
56. (Twice amended) The miniature chromatograph of claim 51, further comprising a sealing element situated over at least a portion of at least one of said at least [one] two capillary [column] columns.

C20
57. (Thrice amended) An electrophoretic apparatus, comprising:
a substrate [including a material] comprising at least one of silicon, gallium arsenide, and indium phosphide;
at least one sample column formed in [said material of] said substrate and comprising a first end, a second end, and a first porous matrix which comprises a first plurality of pores; and a control column comprising a second porous silicon matrix comprising a second plurality of pores formed in [said material of] said substrate.

C21
61. (Amended) The electrophoretic apparatus of claim 58, wherein said first electrode and said second electrode, when operably connected to a power source, are capable of generating a current along a distance of at least one of said [first] at least one sample column and said [capillary] control column.

C22
64. (Thrice amended) An analyte detection apparatus, comprising:
a substrate comprising silicon; and
Gmif matrices [a matrix] formed in [said silicon of] said substrate, said [matrix] matrices comprising at least [one] two porous [column] columns continuous with a surface of said substrate.

C23
66. (Twice amended) The analyte detection apparatus of claim 64, further comprising a capture substrate disposed on at least one of said [matrix] matrices.

C24
71. (Amended) The analyte detection apparatus of claim 64, further comprising a reaction region along the length of at least one of said at least two porous [column] columns.

C25
72. (Thrice amended) The analyte detection apparatus of claim 64, [further comprising] wherein at least one of said at least two porous columns comprises a control column[on said substrate].

REMARKS

This amendment is in response to the Office Action of May 24, 2000, which has been received and reviewed. Claims 1, 3-64, 66-74, and 105-107 are currently pending in the application. Reconsideration of the application is respectfully requested in light of the amendments and remarks presented herein.